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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,279	03/06/2002	Arnaud Gueguen	220260US2	5585

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EXAMINER	
TORRES, JOSEPH D	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/091,279	GUEGUEN, ARNAUD	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05/09/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 12/27/2004. These drawings are accepted.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The newly amended abstract of the disclosure is objected to because the abstract uses form and legal phraseology such as "said". Correction is required. See MPEP § 608.01(b).

Claim Objections

3. In view of the amendment filed 12/27/2004, the Examiner withdraws previous objections to the claims.

Claims 8-13 are objected to under 37 CFR 1.75(c) as being in improper form because they are written as independent claims but recite limitations to other claims in the body of the claim language. Note: claim limitations must not refer to extrinsic information. The Examiner suggest either writing the claims in proper dependent form or incorporating the claim language of claim 1 into the dependent claims 1-13.

Claim Rejections - 35 USC § 112

4. In view of the amendment filed 12/27/2004, the Examiner withdraws previous 112 rejections to the claims.

Response to Arguments

5. Applicant's arguments with respect to Prior Art rejections of claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

As per the double patenting rejection, the Applicant contends, "Serial No. 10/093,495. Applicant notes that Claim 1 of the (495 application recites the step of evaluating a resource available for decoding of a block of size N, which is not recited in amended claim 1". The Examiner asserts that all of the claim language of amended claim 1 is still substantially embedded in claim of the '495 application, which the Applicant appears to agree with since the Applicant does not recite any limitation in the current application that is not in the '495 application. The Examiner maintains the double patenting rejection of claims 1-13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang; Vicki Ping et al. (US 6233709 B1, hereafter referred to as Zhang) Lee; Pil Joong et al. (US 6289486 B1, hereafter referred to as Lee).

35 U.S.C. 103(a) rejection of claims 1, 6, 8 and 9.

Zhang teaches determining submultiple block size among a plurality of integer block sizes N/k, which are submultiples of integer block size N by an integer factor k greater than or equal to 1, wherein k is a factor of N (col. 2, lines 14-17 in Zhang teach that an encoded signal of length N is divided into frames of length N/k where k is the number of frames for transmission; col. 4, lines 47-52 in Zhang teach that the encoded signal of

length N is received by Input Buffer 102 in Figure 1 and divided into frames of length N/k where k is the number of frames for storage); and determining a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block, based on the maximum error rate (col. 3, lines 30-40 in Zhang), and such that a mean number of iterations that will be applied by the iterative decoding process on the submultiple sized block size is minimized (Step 208 in Figure 2 allows for the iterative decoding process to be aborted before the maximum number of iterations N_{max} whenever it is determined that a frame is correct thereby reducing the mean number of iterations that will be applied by the iterative decoding process on the submultiple sized block size so that the mean number of iterations is minimized).

However Zhang does not explicitly teach the specific use of determining the frame length N/k.

Lee, in an analogous art, teaches an adaptive scheme for determining frame size (See Step 611 in Figure 8 and col. 6, lines 15-16 in Lee; Note: the Frame size is determined by interleaver size in Lee).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zhang with the teachings of Lee by including an additional step of use of determining the frame length N/k. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of determining the frame length N/k would have provided the opportunity to use an interleaver that

maximizes a minimum hamming distance of the turbo code in terms of a block code (col 2, lines 55-57 in Lee).

35 U.S.C. 103(a) rejection of claim 2.

Errors are a function of signal to noise ratio hence CRC error detection used for determining the number of iterations is a function of signal to noise ratio. Note also: CRC is a reliability crieteria.

35 U.S.C. 103(a) rejection of claims 3-5.

Col. 2, line 9-13 in Zhang teach that the determination of N_{min} and N_{max} may be made based on data tables stored in memory.

35 U.S.C. 103(a) rejection of claim 7.

Figure 2 of Zhang teaches that the number of iterations is never allowed to exceed the maximum number of iterations hence the selected frame size N/k will always be limited so that the mean number of iterations is always less than the maximum number of iterations.

35 U.S.C. 103(a) rejection of claim 10-13.

See Frame size signal in Figure 7.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-13 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-19 of copending Application No. 10/093,495. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

Claim 1 of Application No. 10/093,495 recites, "Method of optimising the size of blocks of coded data, intended to be subjected to iterative decoding, characterised in that it comprises a first step evaluating a resource (T) available for the decoding of a block of normal size (N) and a second step seeking, amongst a plurality of block sizes (N/k) which are submultiples of the normal size by an integer factor (k) greater than or equal

to 1 and requiring on average a number of iterations ($n_{iterations}^{(k)}$) compatible with the said available resource, the one which makes it possible to obtain the lowest error rate at the output of the iterative decoding.".

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Conclusion

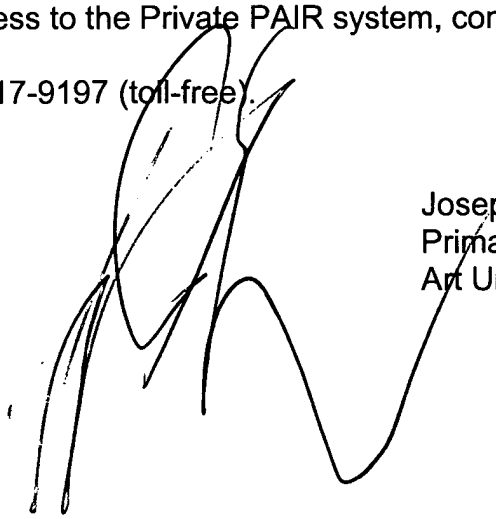
8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD
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Art Unit 2133